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ABSTRACT

This study identifies 24 benchmarks considered essential to ensuring excellence in Internet-based distance learning, as used by the following six institutions which are leaders in distance education: Brevard Community College (Florida); Regents College (New York); University of Illinois at Urbana-Champaign; University of Maryland University College; Utah State University; and Weber State University (Utah). The benchmarks are divided into seven categories: (1) institutional support; (2) course development; (3) teaching/learning; (4) course structure; (5) student support; (6) faculty support; and (7) evaluation and assessment. The study seeks to ascertain the degree to which the benchmarks are actually incorporated in the policies and practices of the institutions, and how important the benchmarks are to faculty, administrators, and students. Quantitative information for the study was derived from a Likert-scale survey, and qualitative information was derived from in-depth interviews. The report concludes that, for the most part, the benchmarks are considered important and that the institutions strive to incorporate them into their policies, practices, and procedures. Appendixes contain institutional profiles and detailed survey results. (Contains 26 references.) (RH)



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# QUALITY ON THE LINE

## BENCHMARKS FOR SUCCESS IN INTERNET-BASED DISTANCE EDUCATION

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# QUALITY ON THE LINE

## BENCHMARKS FOR SUCCESS IN INTERNET-BASED DISTANCE EDUCATION

PREPARED BY:
The Institute for
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APRIL 2000

The Institute for Higher Education Policy is a non-profit, non-partisan organization whose mission is to foster access to and quality in postsecondary education. The Institute's activities are designed to promote innovative solutions to the important and complex issues facing higher education. These activities include research and policy analysis, policy formulation, program evaluation, strategic planning and implementation, and seminars and colloquia.

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We heartily acknowledge the help of these individuals and organizations and recognize that they are not responsible for errors of omission or interpretation contained herein.

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# Foreword

The public debate over the merits of Internet-based distance learning too often consists of high-pitched vitriol and hyperbole. Proponents ooze with blind adoration, declaring that online learning can resolve all the problems confronting traditional education. Opponents insist that courses taught on the net are incapable of living up to the standards of the traditional bricks and mortar classroom.

While many continue to divide themselves into these "for" and "against" camps, a first-of-its-kind study produced by The Institute for Higher Education Policy and sponsored by the National Education Association, the nations' largest professional association of higher education faculty, and Blackboard Inc., a leading Internet education company, brings reason and research data to this overheated debate, providing more tangible measures of quality in distance learning. The study makes clear that distance learning can be quality learning.

*Quality On the Line* identifies 24 benchmarks considered essential to ensuring excellence in Internet-based distance learning. The benchmarks are divided into seven categories of quality measures currently in use on campuses around the nation.

These benchmarks distill the best strategies used by colleges and universities that are actively engaged in online learning, ensuring quality for the students and faculty who use it. This area of study is particularly important considering the breakneck pace of growth in Internet-based distance learning.

This growth is no surprise. The opportunities for learning and growth online are virtually limitless. Internet-based education transcends typical time and space barriers, giving students the ability to access learning opportunities day and night from every corner of the globe. Coursework can now provide material in highly interactive audio, video, and textual formats at a pace set by the student.

These attributes are very exciting, but drastically different from the traditional classroom-based education. How can a teaching and learning process that deviates so markedly from what has been practiced for hundreds of years maintain quality? Who will be the guardians of quality and the innovators to present material to students in new and engaging ways?

As the nation's largest education union and as a leading online education company, we believe the distance from student to teacher must be measured in results—quality learning—achieved by our students. The benchmarks identified in this study will ensure that as we plunge headlong into a technology-driven future, unions and business help America's campuses remain on the forward edge of quality.

Matthew Pittinsky,
*Chairman*
Blackboard Inc.

Bob Chase, *President*
National Education
Association

# Executive Summary

In the 10 years since the coding language for the World Wide Web (WWW) was developed, educational institutions, research centers, libraries, government agencies, commercial enterprises, advocacy groups, and a multitude of individuals have rushed to connect to the Internet. One of the consequences of this tremendous surge in online communication has been the rapid growth of technology-mediated distance learning at the higher education level. A recent survey by the U.S. Department of Education's National Center for Education Statistics (NCES) found that from 1994-95 to 1997-98 the number of distance education programs increased by 72 percent. Moreover, an additional 20 percent of the institutions surveyed plan to establish distance education programs within the next three years. The survey estimated that more than 1.6 million students were enrolled in distance education courses in 1997-98.[1]

This extraordinary growth of technology-mediated distance learning in higher education has prompted several different organizations to develop principles, guidelines, or benchmarks to ensure quality distance education. The quality assurance benchmarks promoted by these organizations are designed to apply to a wide variety of institutional contexts and consist of fairly broad statements. Virtually all of the strategies include such topics as course development, faculty training, student services, learning resources, infrastructure, and outcomes assessment.

These benchmarks, which were developed initially for all types of distance learning, have existed in various forms for a number of years. The question that arises is whether they are applicable to *Internet-based* distance education. In short, are the current benchmarks appropriate and necessary to ensure quality Internet-based distance education? Two organizations—the National Education Association (NEA), the nation's largest professional association of higher education faculty, and Blackboard Inc., a widely used platform provider for online education—are interested in exploring these issues and their implications. The two organizations jointly commissioned The Institute for Higher Education Policy to examine the benchmarks by studying active distance learning programs at several institutions.

The Institute was approached by the two commissioning organizations in part because of its previous experience in analyzing issues related to quality in distance education. The Institute's widely cited 1999 report, *What's the Difference? A Review of Contemporary Research on the Effectiveness of Distance Learning in Higher Education*, has generated considerable dialogue throughout academia about what constitutes quality in distance learning settings. This report is not intended to overcome many of the limitations of previous research noted in *What's the Difference?* Instead, it uses case studies to help build a foundation for future analyses capable of refining or expanding upon the lessons learned from the institutions studied here.

Specifically, NEA and Blackboard Inc. asked The Institute to attempt to validate those benchmarks that have been published by various entities, with specific attention to Internet-based distance education. This study is designed to ascertain the degree to which the benchmarks are actually incorporated in the policies, procedures, and practices of colleges and universities that are distance education leaders. In addition, this case study seeks to determine *how important* the benchmarks are to the institutions' faculty, administrators, and students.

[1] This count is not unduplicated; the survey tallied students in each distance learning course in which they enrolled, not as individual students who may have enrolled in one or more distance learning courses.

The case study process consisted of three sequential phases. First, a comprehensive literature search was conducted to compile those benchmarks recommended by other organizations and groups as well as those suggested in various articles and publications. This search resulted in a total of 45 benchmarks developed by these other organizations. Second, institutions that have substantial experience in distance education and are providing leadership in Internet-based distance education were identified. Third, these institutions were visited by Institute staff to assess the degree to which the campuses incorporated the benchmarks in their Internet-based distance learning courses and programs. Each site visit included interviews with faculty, administrators, and students. These individuals were surveyed on both the presence and importance of the original benchmarks to determine to what extent they are being followed and if they make a difference in terms of academic quality.

The six institutions participating in the study were: Brevard Community College, Regents College, the University of Illinois at Urbana-Champaign, the University of Maryland University College, Utah State University, and Weber State University. To qualify for selection the institutions (1) must have substantial experience in distance education; (2) are recognized as among the leaders in distance education; (3) are regionally accredited; and (4) offer more than one degree program via online distance learning. To ensure that a broad spectrum of higher education institutions were represented, the study included a community college, a comprehensive institution, a research institution, and a virtual institution.

The results of the study revealed that, for the most part, the benchmarks for quality Internet-based distance education were considered important and, in general, the institutions strove to incorporate them into their policies, practices, and procedures. At the same time, several benchmarks did not enjoy consensus among administrators, faculty, and students at the institutions and, in some instances, were not considered mandatory to ensure quality in distance education.

The following list represents the final benchmarks resulting from this study. The Institute's analysis of the data and information from the interviews resulted in the elimination of 13 benchmarks and the addition of three benchmarks. Several benchmarks were combined because they addressed the same issue(s) and were related to each other. The final outcome is a list of 24 benchmarks that are essential to ensure quality in Internet-based distance education. These benchmarks may assist policymakers—such as college and university presidents and chief academic officers, state coordinating boards, accrediting bodies, state legislatures, and governors' offices—as well as faculty and students, in making reasonable and informed judgments with regard to the quality of Internet-based distance education.

## Institutional Support Benchmarks

- A documented technology plan that includes electronic security measures (i.e., password protection, encryption, back-up systems) is in place and operational to ensure both quality standards and the integrity and validity of information.
- The reliability of the technology delivery system is as failsafe as possible.
- A centralized system provides support for building and maintaining the distance education infrastructure.

## Course Development Benchmarks

- Guidelines regarding minimum standards are used for course development, design, and delivery, while learning outcomes—not the availability of existing technology—determine the technology being used to deliver course content.
- Instructional materials are reviewed periodically to ensure they meet program standards.
- Courses are designed to require students to engage themselves in analysis, synthesis, and evaluation as part of their course and program requirements.

## Teaching/Learning Benchmarks

- Student interaction with faculty and other students is an essential characteristic and is facilitated through a variety of ways, including voice-mail and/or e-mail.
- Feedback to student assignments and questions is constructive and provided in a timely manner.

- Students are instructed in the proper methods of effective research, including assessment of the validity of resources.

## Course Structure Benchmarks

- Before starting an online program, students are advised about the program to determine (1) if they possess the self-motivation and commitment to learn at a distance and (2) if they have access to the minimal technology required by the course design.
- Students are provided with supplemental course information that outlines course objectives, concepts, and ideas, and learning outcomes for each course are summarized in a clearly written, straightforward statement.
- Students have access to sufficient library resources that may include a "virtual library" accessible through the World Wide Web.
- Faculty and students agree upon expectations regarding times for student assignment completion and faculty response.

## Student Support Benchmarks

- Students receive information about programs, including admission requirements, tuition and fees, books and supplies, technical and proctoring requirements, and student support services.
- Students are provided with hands-on training and information to aid them in securing material through electronic databases, interlibrary loans, government archives, news services, and other sources.
- Throughout the duration of the course/program, students have access to technical assistance, including detailed instructions regarding the electronic media used, practice sessions prior to the beginning of the course, and convenient access to technical support staff.
- Questions directed to student service personnel are answered accurately and quickly, with a structured system in place to address student complaints.

## Faculty Support Benchmarks

- Technical assistance in course development is available to faculty, who are encouraged to use it.
- Faculty members are assisted in the transition from classroom teaching to online instruction and are assessed during the process.
- Instructor training and assistance, including peer mentoring, continues through the progression of the online course.
- Faculty members are provided with written resources to deal with issues arising from student use of electronically-accessed data.

## Evaluation and Assessment Benchmarks

- The program's educational effectiveness and teaching/learning process is assessed through an evaluation process that uses several methods and applies specific standards.
- Data on enrollment, costs, and successful/innovative uses of technology are used to evaluate program effectiveness.
- Intended learning outcomes are reviewed regularly to ensure clarity, utility, and appropriateness.

# Introduction

It has been only 10 years since the coding language for the World Wide Web (WWW) was developed by Tim Berners-Lee in Switzerland, and Wide Area Information Servers and Gopher protocols became the first tools for "surfing the net." Since that time, educational institutions, research centers, libraries, government agencies, commercial enterprises, advocacy groups, and a multitude of individuals have rushed to connect to the Internet (Johnson, 1999). It seems clear to most observers that the Internet and WWW profoundly influence society in general and colleges and universities in particular. Not since the printing press was invented by Johann Gutenberg in the 15th century has an "invention" generated such potential to change dramatically how people communicate and interact with one another.

One of the consequences of this tremendous surge in online communication has been the rapid growth of technology-mediated distance learning at the higher education level. A recent survey by the U.S. Department of Education's National Center for Education Statistics (NCES) found that from 1994-95 to 1997-98 the number of distance education degree programs increased by 72 percent. Moreover, an additional 20 percent of the institutions surveyed plan to establish distance education programs within the next three years. The survey estimated that more than 1.6 million students[1] were enrolled in distance education courses in 1997-98, a number that is surely even higher today (Lewis, 1999).

This extraordinary growth of technology-mediated distance learning in higher education has prompted several different organizations to develop principles, guidelines, or benchmarks to ensure quality distance education.[2] These organizations include the American Council on Education, the National Education Association, the Global Alliance for Transnational Education (GATE), the Southern Regional Electronic Campus, the Commission on Higher Education of the Middle States Association of Colleges and Schools, and the Western Cooperative for Educational Telecommunications, among others. The quality assurance benchmarks promoted by these organizations are designed to apply to a wide variety of institutional contexts and consist of fairly broad statements. Virtually all of the strategies include such topics as course development, faculty training, student services, learning resources, infrastructure, and outcomes assessment.

These benchmarks, which were developed initially for all types of distance learning, have been in existence in various forms for a number of years. The question that arises is whether they are applicable to *Internet-based* distance education. In short, are the current benchmarks appropriate and necessary to ensure quality Internet-based distance education? Two organizations—the National Education Association (NEA), the nation's largest professional association of higher education faculty, and Blackboard Inc., a widely used platform provider for online education—are interested in exploring these issues and their implications. As a result, the two organizations jointly commissioned The Institute for Higher Education Policy to examine the benchmarks by studying active distance learning programs at several institutions. The Institute was approached by the two commissioning organizations in part because of its previous experience in analyzing issues related to quality in distance

[1] This count is not unduplicated; the survey tallied students in each distance learning course in which they enrolled, not as individual students who may have enrolled in one or more distance learning courses.

[2] For the remainder of the report, the term "benchmark" is used to describe the array of principles, strategies, and guidelines that have been recommended by the many organizations concerned with quality distance education. In general, a benchmark is an institutional behavior that contributes to ensuring quality in technology-mediated distance education.

education. The Institute's widely cited 1999 report, *What's the Difference? A Review of Contemporary Research on the Effectiveness of Distance Learning in Higher Education*, has generated considerable dialogue throughout academia about what constitutes quality in distance learning settings.

Specifically, NEA and Blackboard Inc. asked The Institute to attempt to validate those benchmarks that have been published by various entities, with specific attention to Internet-based distance education. Given the rapid growth of Internet-based distance education, how realistic are the benchmarks? Do they make sense to practitioners of Internet-based distance education? Are they taken seriously by higher education institutions? To what extent are the benchmarks being incorporated into institutions' distance learning operations? Are there additional benchmarks that are not found in the literature but are being used by practitioners that can contribute to the quality of distance education?

This study is designed to answer these questions by ascertaining the degree to which the benchmarks are actually being incorporated in the policies, procedures, and practices of colleges and universities that are distance education leaders. In addition, this case study seeks to determine *how important* the benchmarks are to the institutions' faculty, administrators, and students. The results of this study can assist policymakers—such as college and university presidents and chief academic officers, state coordinating boards, accrediting bodies, state legislatures, and governors' offices—as well as faculty and students, in making reasonable and informed judgments with regard to the quality of Internet-based distance education.

A case study addressing quality benchmarks for Internet-based distance education inherently includes some of the very limitations noted in the *What's the Difference?* report. The major conclusion of the report was that the research to date addressing the quality of distance education was inconclusive and, thus, much is still unknown regarding how, and in what ways, technology can enhance the teaching/learning process (Phipps and Merisotis, 1999). This report is not intended to overcome many of these limitations. Instead, it uses case studies to help build a foundation for future analyses capable of refining or expanding upon the lessons learned from the institutions studied here.

Internet-based distance education was a specific focus of the case study for at least three reasons. First, Internet-based distance education is quickly becoming the predominant technology in distance education, which is not surprising given the accelerating power of personal computers, increasing telecommunications bandwidth capabilities, and state-of-the-art software development and delivery. The recent NCES report shows that not only is Internet-based distance education the most prevalent technology, it is also the fastest growing. At least 58 percent of the reporting institutions who offered distance education used Internet-based courses, compared to 54 percent who used two-way interactive video and 47 percent who used one-way pre-recorded video. Even as the percentage of institutions offering Internet-based courses[1] jumped from approximately 22 percent to 58 percent in three years, use of all of the other technologies actually had declined since 1994-95. The report notes that Internet-based distance education will be a growing avenue for technology-mediated learning in the coming years (Lewis, 1999).

In addition to the Internet's profound influence on distance education, it is also important to point out that a growing number of faculty are using the Internet to complement traditional classroom-based courses. For instance, it is not uncommon for course syllabi to be placed on the Web. Faculty also are using cyberspace to provide access to threaded discussions, group activities, and quizzes for their on-campus students.

Second, Internet-based distance education allows the teaching/learning process to occur "at any time and any place." The ability to provide asynchronous interactive learning activities has become the signature characteristic of this technology, setting it apart from most of the other technologies. Not only does Internet-

[1] In the 1994-95 survey, this category was entitled computer-based technologies. This name was changed in 1997-98 to Internet-based courses to reflect more accurately the way in which the technologies are used.

based instruction allow the teacher and learner to communicate over any distance to any place, it alters the concept of time. Generally, students can participate in a course at any time of day or night they choose. Indeed, because of this characteristic, the term "24-7" has become a part of the lexicon of distance education.

Third, because of these features, Internet-based distance education is, in many ways, fundamentally different than traditional classroom-based education. Among other things, it is this distinctly different concept of time that engenders concern and skepticism from many in the higher education community. For some, though, it offers exciting new opportunities to teach students, as evidenced by the following observation from the League for Innovation in the Community College:

> The beauty of the Web is that it provides an entirely new context for teaching and learning. It removes the physical and time constraints for *instructors* as well as learners. Moving a course to the Web presents the perfect opportunity to return to the core principles of teaching and learning to create a new pedagogical model for our practices (Boettcher, 1999).

How can a teaching/learning process that deviates so markedly from what has been practiced for hundreds of years embody quality education? This question has been addressed in many ways by the range of benchmarks developed by a variety of organizations concerned about quality distance education. These benchmarks are examined in more detail in the following pages.

# The Case Study

The case study process consisted of three sequential phases. First, a comprehensive literature search was conducted to compile those benchmarks recommended by several organizations, as well as those suggested in various articles and publications. Second, institutions were identified that have substantial experience and are providing leadership in distance education. Third, these institutions were visited by Institute staff to assess the degree to which the campuses incorporated the benchmarks in their Internet-based distance learning courses and programs. A more detailed explanation of each phase of the case study follows.

## Phase I: Review of the Literature

In addition to reviewing benchmarks that have been published by policy and educational organizations, several articles by prominent authors in distance education were examined. (The selected references found at the end of this report provide a better understanding of the array of resources reviewed.) Considerable overlap existed among the benchmarks developed by the various sources and, consequently, 45 specific benchmarks were identified. These benchmarks were grouped into the following seven categories:

- **Institutional Support.** The benchmarks in this category include those activities by the institution that help to ensure an environment conducive to maintaining quality distance education, as well as policies that encourage the development of Internet-based teaching and learning. These benchmarks address technological infrastructure issues, a technology plan, and professional incentives for faculty.
- **Course Development.** This category includes benchmarks for the development of courseware, which is produced largely either by individual faculty (or groups of faculty members) on campus, subject experts in organizations, and/or commercial enterprises.
- **Teaching/Learning Process.** This category addresses the array of activities related to pedagogy, the art of teaching. Included in this category are process benchmarks involving interactivity, collaboration, and modular learning.
- **Course Structure.** The benchmarks in this category address those policies and procedures that support and relate to the teaching/learning process. They include course objectives, availability of library resources, types of materials provided to students, response time to students, and student expectations.
- **Student Support.** This category includes the array of student services normally found on a college campus including admissions, financial aid, etc.—as well as student training and assistance while using the Internet.
- **Faculty Support.** Since not every faculty member possesses the skills and temperament for Internet-based distance learning, these benchmarks address activities that assist faculty in teaching online, including policies for faculty transition help as well as continuing assistance throughout the teaching period.
- **Evaluation and Assessment.**[4] The benchmarks in this category relate to policies and procedures that address how, or if, the institution evaluates Internet-based distance learning. They include outcomes assessment and data collection.

## Phase II: Identification of Institutions

Six institutions were identified for site visits. To qualify for selection the institutions (1) must have substantial experience in distance education; (2) are recognized as among the leaders in distance education; (3) are

[4] Placing the benchmarks in these seven categories is not the only way to classify them. Others may use, and have indeed used, other categories. The categories presented here reflect a simple logic that addresses major functions of any institution.

regionally accredited; and (4) offer more than one degree program via online distance learning. To ensure that a broad spectrum of higher education institutions were represented, the case study included a community college, a comprehensive institution, a research institution, and a virtual institution. The following institutions participated in the case study (a detailed profile of each institution is provided in Appendix One):

- **Brevard Community College.** This Florida college began offering distance education courses in 1974 and is also a participant in the PBS Adult Learning Service "Going the Distance Program." Brevard received a grant from the U.S. Department of Education's Fund for the Improvement of Postsecondary Education for faculty training and development in order to positively impact student learning.
- **Regents College.** This unique institution began in 1971 as the External Degree Program of the University of the State of New York. Focusing on working adults, the college offers online graduate programs in Nursing and Liberal Studies. Over 83,000 people worldwide have earned a college degree through Regents' programs.
- **University of Illinois at Urbana-Champaign.**[5] As one of three participants in the University of Illinois Online, the institution offers 20 degree- or certificate-programs over the Internet, with more in development. The university received a grant from the Pew Grant Program of Course Redesign in 1999 to redesign a two-course sequence in Economic Statistics.
- **University of Maryland University College.** This virtual institution was founded with the mission of providing continuing education to Maryland's professional workforce. With over 25 years experience in distance education, the college offers14 bachelor's and 10 master's degree programs online. The college has twice been awarded the University Continuing Education Association's Award for Innovative Distance Education.
- **Utah State University.** This institution has been involved in various forms of distance education since 1911. The university offers two types of online courses, semester-based and independent study, and has been selected as a participant in the federal Learning Anytime Anywhere Partnerships program created in the 1998 reauthorization of the Higher Education Act.
- **Weber State University (WSU).** This comprehensive institution launched WSU Online in 1997 and currently offers two-thirds of the online learning courses in Utah. WSU received an Innovation in Distance Education Award from the University Continuing Education Association in 1998.

## Phase III: The Institutional Visit

Between September 1999 and January 2000, Institute staff visited each institution. In addition to conducting indepth interviews with faculty, administrators, and students, a survey using a Likert Scale[6] was administered to each interviewee.[7] The survey also was administered to distance education students who were not able to participate in the interview process primarily because they did not reside near the institution. In all, 27 faculty, 62 administrators, 16 individuals who were both a faculty member and an administrator, and 42 students were interviewed and/or completed a survey, for a total of 147 respondents.

The Likert Scale listed the 45 benchmarks and requested each person to rank each benchmark on two criteria. First, to what extent is the benchmark true for the distance learning program (ranked from 1=completely absent to 7=completely present)? Second, how important is each benchmark to ensure

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[5] Unlike the other colleges and universities in the case study where the entire institution participated in the case study, at the University of Illinois at Urbana-Champaign, only two Internet-based programs were reviewed: Master's programs in Human Resource Development and Curriculum, Technology, and Education Reform.

[6] A Likert scale is an instrument that asks an individual to respond to a series of statements by indicating whether he or she agrees or disagrees with each statement.

[7] The authors want to express their appreciation to the faculty, administrators, and students who were interviewed. We were struck by the knowledge and impressive professionalism of the faculty and administrators involved in distance learning, and the motivation and excitement of the students. The level of enthusiasm for teaching was extraordinary and the willingness of the faculty and administrators to share both their successes and challenges revealed a candor that enhanced the credibility of this study.



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quality (ranked from 1=not important to 5=very important)? Those persons who did not have sufficient knowledge or experience relating to the benchmark could check a "Not Applicable" box. The mean score, mode, and standard deviation were computed for each benchmark (see Appendix Two).

At the extremes, this process could result in four hypothetical scenarios: a benchmark could be present completely and very important; a benchmark could be present completely and not important; a benchmark could be absent completely and very important; and a benchmark could be absent completely and not important. The actual results are provided in the next section.

## Benchmarks Identified from the Literature

### Institutional Support

1. Faculty are provided professional incentives for innovative practices to encourage development of distance learning courses.
2. There are institutional rewards for the effective teaching of distance learning courses.
3. A documented technology plan is in place to ensure quality standards.
4. Electronic security measures are in place to ensure the integrity and validity of information.
5. Support for building and maintaining the distance education infrastructure is addressed by a centralized system.

### Course Development

6. Distance learning course development must be approved through a broad peer review process.
7. Guidelines exist regarding minimum standards for course development, design, and delivery.
8. Course design is managed by teams comprised of faculty, content experts, instructional designers, technical experts, and evaluation personnel.
9. During course development, the various learning styles of students are considered.
10. Assessment instruments are used to ascertain the specific learning styles of students, which then determine the type of course delivery.
11. Courses are designed with a consistent structure, easily discernable to students of varying learning styles.
12. The technology being used to deliver course content is based on learning outcomes.
13. Instructional materials are reviewed periodically to ensure they meet program standards.

### Teaching/Learning Process

14. Student interaction with faculty is facilitated through a variety of ways.
15. Student interaction with other students is facilitated through a variety of ways.
16. Feedback to student assignments and questions is provided in a timely manner.
17. Feedback to students is provided in a manner that is constructive and non-threatening.
18. Courses are separated into self-contained segments (modules) that can be used to assess student mastery before moving forward in the course or program.
19. The modules/segments are of varying lengths determined by the complexity of learning outcomes.
20. Each module/segment requires students to engage themselves in analysis, synthesis, and evaluation as part of their course assignments.
21. Class voice-mail and/or e-mail systems are provided to encourage students to work with each other and their instructor(s).
22. Courses are designed to require students to work in groups utilizing problem-solving activities in order to develop topic understanding.
23. Course materials promote collaboration among students.

### Course Structure

24. Students are provided with supplemental course information that outlines course objectives, concepts, and ideas.
25. Specific expectations are set for students with respect to a minimum amount of time per week for study and homework assignments.

26. Faculty are required to grade and return all assignments within a certain time period.
27. Sufficient library resources are made available to the students.
28. Students are instructed in the proper methods of effective research, including assessment of resource validity.
29. Before starting the program, students are advised about the program to determine if they have the self-motivation and commitment to learn at a distance.
30. Learning outcomes for each course are summarized in a clearly written, straightforward statement.

### Student Support

31. Students can obtain assistance to help them use electronically accessed data successfully.
32. Students are provided with hands-on training and information to aid them in securing material through electronic databases, interlibrary loans, government archives, news services, etc.
33. Written information is supplied to the student about the program.
34. Easily accessible technical assistance is available to all students throughout the duration of the course/program.
35. A structured system is in place to address student complaints.

### Faculty Support

36. Technical assistance in course development is available to faculty and they are encouraged to use it.
37. Faculty members are assisted in the transition from classroom teaching to distance instruction and are assessed in the process.
38. There are peer mentoring resources available to faculty members teaching distance courses.
39. Distance instructor training continues throughout the progression of the online class.
40. Faculty members are provided with written resources to deal with issues arising from student use of electronically-accessed data.

### Evaluation and Assessment

41. The program's educational effectiveness is measured using several methods.
42. An evaluation process is used to improve the teaching/learning process.
43. Specific standards are in place to compare and improve learning outcomes.
44. Data on enrollment, costs, and successful/innovative uses of technology are used to evaluate program effectiveness.
45. Intended learning outcomes are regularly reviewed to ensure clarity, utility, and appropriateness.

# How Did the Benchmarks Rate?

It was clear from the site visits that quality benchmarks were considered with great care and embraced by every institution that participated in the case study. At every campus, at least one faculty member, administrator, or often several students stated that the benchmarks were on target and (with some exceptions that will be explained later in the report) need to be addressed to ensure quality in Internet-based distance education courses and programs. As one respondent said about the survey, "Good questions. While the 'best' possible program would have rated *all* of these items as very important and strongly agree, one must consider resources and growing pains so as to target the *most* important areas."

In addition, several respondents were somewhat chagrined that Internet-based distance education was under such intense scrutiny while the traditional classroom-based teaching was not under the same spotlight. One person showed her exasperation by writing, "The same standards and benchmarks we use in distance education should be applied to on-campus courses as well. It doesn't happen that way here or across the country."

It should be noted that *all* of the institutions are included in the data presented in this report. Because the intention of this case study is to validate the benchmarks for the higher education community in general, it serves no purpose to separate the data for each institution. While there are exceptions to the conclusions and comments from the interviews, the following discussion represents a consensus of a majority of the institutions in the case study. It is, therefore, not appropriate to assume that the attributes outlined in the discussion always represent each and every institution.

The information for this case study is both quantitative (the survey using a Likert Scale) and qualitative (the indepth interviews). No effort was made to apply any statistical tests to ascertain the degree of importance of a benchmark and its presence at the institutions, and the difference between the two. Instead, the more than 100 interviews (all lasting at least an hour) guided the analysis. The respondents were interviewed after completing the survey and many of their comments were directed to specific items in the survey. The interviews informed the quantitative data and served to put a "human face" on the stark numbers. The standard deviations of each benchmark are presented in Appendix Two to demonstrate more fully the range of consensus for each item.

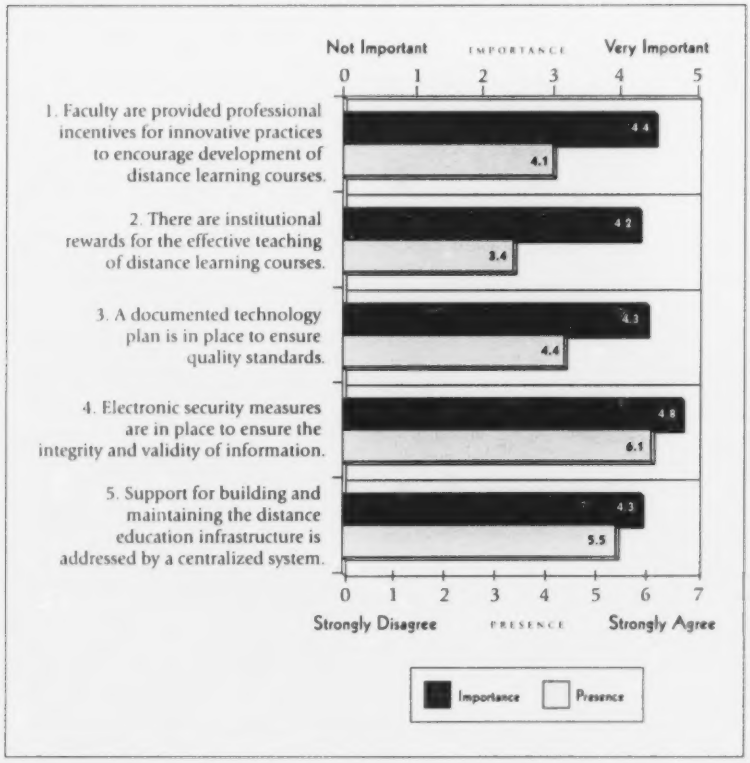
This section is organized around the seven categories of benchmarks: Institutional Support, Course Development, Teaching/Learning Process, Course Structure, Student Support, Faculty Support, and Evaluation and Assessment. Each category is accompanied by a chart showing the relationship between the degree of presence for the benchmark and its importance to the institution. The discussion of the category includes comments from the interviews.

## Institutional Support

All of the benchmarks in this category were considered important to ensure quality Internet-based distance education. The benchmark addressing electronic security measures (#4) received exceptionally high ratings both with regard to importance and presence at the institution. There was a marked difference between the importance of the benchmark regarding a documented technology plan (#3) and the actual presence of a plan on campus. Respondents at some institutions complained that because of the extraordinary growth of Internet-based

> ***When contemplating the effect of the Internet on higher education, we better understand what 7th graders are doing—because they are the freshman class of 2005.***
> —ADMINISTRATOR

## Figure One: Institutional Support Benchmarks


Not Important
IMPORTANCE
Very Important
0 1 2 3 4 5
1. Faculty are provided professional incentives for innovative practices to encourage development of distance learning courses.
4.4
4.1
2. There are institutional rewards for the effective teaching of distance learning courses.
4.2
3.4
3. A documented technology plan is in place to ensure quality standards.
4.3
4.4
4. Electronic security measures are in place to ensure the integrity and validity of information.
4.8
6.1
5. Support for building and maintaining the distance education infrastructure is addressed by a centralized system.
4.3
5.5
0 1 2 3 4 5 6 7
Strongly Disagree
PRESENCE
Strongly Agree
Importance
Presence

distance education, infrastructure is constantly trying to keep pace with demand.

Compelling student demand has other consequences with regard to planning. Because of increasing student interest in Internet-based distance education at some of the institutions in the case study, administrators revealed that policies are being developed to catch up with practice. One administrator said simply that the institution is moving ahead without all of the answers. While some institutions were farther ahead in their planning than others, some institutions that are struggling to keep up with the demand for Internet-based courses have made a conscious decision to serve students immediately and plan later.

Figure One reveals a substantial difference between the importance of the benchmarks concerning professional incentives and institutional rewards (#1 and 2) and their presence on campus. While considered very important, rewarding and providing incentives to faculty for good online teaching did not receive high scores with regard to their presence at the institutions. This conclusion was reinforced in the interviews, as revealed by comments from one faculty member: "We operate on a 'shoestring,' and the tenure, promotion, and reward system does not take into account the extra time a faculty member needs to teach well in distance education courses." Another administrator noted that at his institution, distance education "has some of our better instructors even though the rewards have not been there for them."

The dedication and knowledge of the faculty who teach Internet-based distance education was apparent in the structured interviews. The faculty who were interviewed showed keen insights into the teaching/learning process, and many were considered by their peers as some of the best teachers at the institution.

The high number of excellent faculty teaching Internet-based distance education courses can be explained partially by the faculty selection practice of many of the institutions. With few exceptions, faculty volunteered to teach distance education courses. One institution used the phrase "work with the willing" to explain this faculty selection process. Faculty who came forward, irrespective of the course they wished to teach, were often allowed to develop a course. Frequently these faculty were veteran teachers who were eager to teach using the Internet. This selection process, of course, produces an array of courses that may not necessarily represent a strategic plan of course and programmatic offerings. This is not to suggest, however, that Internet courses are generated without planning or strategy. As one administrator put it, "...although this institution did not have a strategic plan, 'strategic thinking' was used in the development of Internet courses and programs." For instance, several institutions attempted to develop Internet offerings for courses that had high enrollments such as lower-division, general education courses.

Many respondents suggested that a new benchmark should be added to the list: "The reliability of the technology delivery system should be as failsafe as possible." They explained its importance this way: "If the lights go out in a traditional classroom, it may be an inconvenience. If the system crashes, it's a calamity!"

## Course Development

The three benchmarks relating to learning styles received a mixed reaction from the respondents. As shown in Figure Two, benchmarks 9 and 11 were not considered very important and did not have a high degree of presence at the institutions. Benchmark 10 received low scores with respect to both importance and presence. The interviews helped to explain these sentiments. Many faculty and administrators stated that while these learning style benchmarks sound good on paper, actually meeting the standard is very difficult. One faculty member suggested that the research on learning styles is very poor and simply may not be an appropriate criterion for benchmarks.

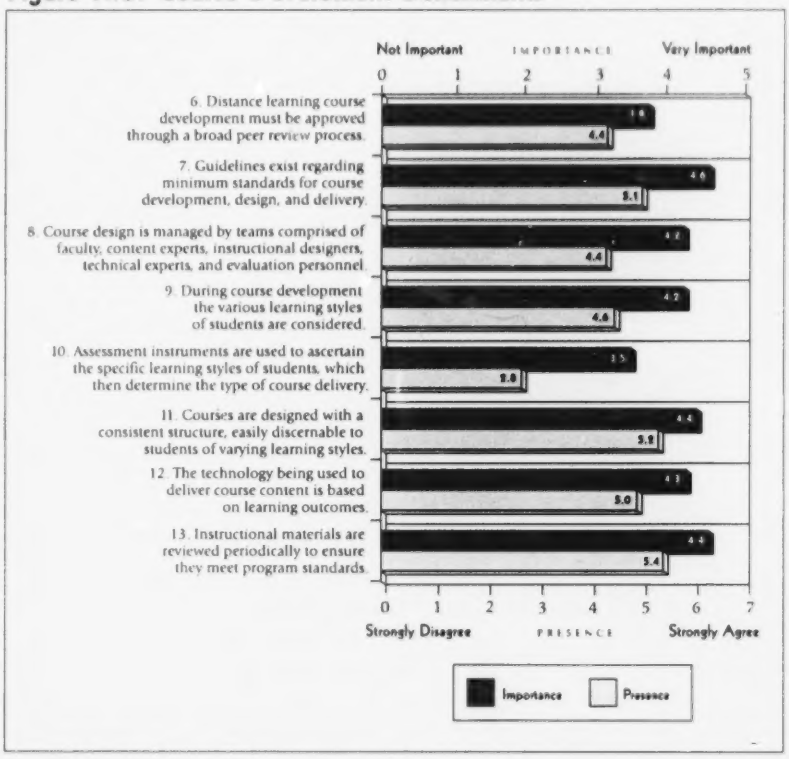
The benchmark addressing the management of course design (#8), also received a mixed reaction. By and large, the development of a course was the responsibility of individual academic departments and the extent to which the procedure met the criteria in the benchmark was a departmental decision. One faculty member said, "Some of the items suggest that greater evaluation, oversight, and course development ought to take place in distance education than for traditionally delivered courses. I don't buy this assumption. Traditional courses rarely come under that kind of scrutiny on this campus or others."

The notion of broad peer review generated many comments. The benchmark on the approval of course development (#6) was not considered very important and did not show a high degree of presence. There was considerable concern regarding the meaning of "broad." Many respondents made it very clear that peer review is, and should be, similar to the traditional model primarily at the departmental level. As one respondent explained, "Quality control is a department responsibility; additional requirements may endanger academic freedom and shared governance."

*The lines between traditional classroom education and Internet-based education are becoming blurred.*
—ADMINISTRATOR

It is important to note that a possible disparity exists between the technology that an institution might possess and the technology available to the typical student. Although institutions may have enhanced, or are enhancing, their capability with high speed networks with additional bandwidth, and improved video quality, course development must take into consideration the technology that the students possess. Many students have older personal computers, equipped with slow modems, insufficient memory, and small hard drives. Put more

**Figure Two: Course Develoment Benchmarks**


Not Important
IMPORTANCE
Very Important
0 1 2 3 4 5
6. Distance learning course development must be approved through a broad peer review process.
4.4
7. Guidelines exist regarding minimum standards for course development, design, and delivery.
5.1
8. Course design is managed by teams comprised of faculty, content experts, instructional designers, technical experts, and evaluation personnel.
4.4
9. During course development the various learning styles of students are considered.
4.6
10. Assessment instruments are used to ascertain the specific learning styles of students, which then determine the type of course delivery.
3.8
11. Courses are designed with a consistent structure, easily discernable to students of varying learning styles.
5.2
12. The technology being used to deliver course content is based on learning outcomes.
5.0
13. Instructional materials are reviewed periodically to ensure they meet program standards.
5.4
0 1 2 3 4 5 6 7
Strongly Disagree
PRESENCE
Strongly Agree
Importance
Presence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bluntly by one administrator, "Bells and whistles have to be available and understood by both the teacher and the student." The disparity between the technological capabilities of the institution and its students was referred to as "cutting edge, not bleeding edge" by one interviewee, while another referred to the "trailing edge" of technology.

## Teaching/Learning Process

The majority of the benchmarks regarding the teaching/learning process were considered both important and present on the campus. However, as shown in Figure Three, the benchmarks related to collaboration and modular learning were not endorsed widely. Benchmarks 22 and 23 were not seen to be very important and, likewise, did not display as high of a degree of presence at the institutions as other benchmarks in this category. Several comments may help to explain this. In general, faculty and administrators suggested that collaboration as an end in itself was not necessary. Collaboration depends upon factors such as the content of the course, the level of instruction (undergraduate versus graduate), and the values of the instructor. Regardless of its importance, however, one faculty member noted that online students are collaborating much more than students in traditional classes.

***Online courses require more discipline, but you can work at your own pace.***
—STUDENT

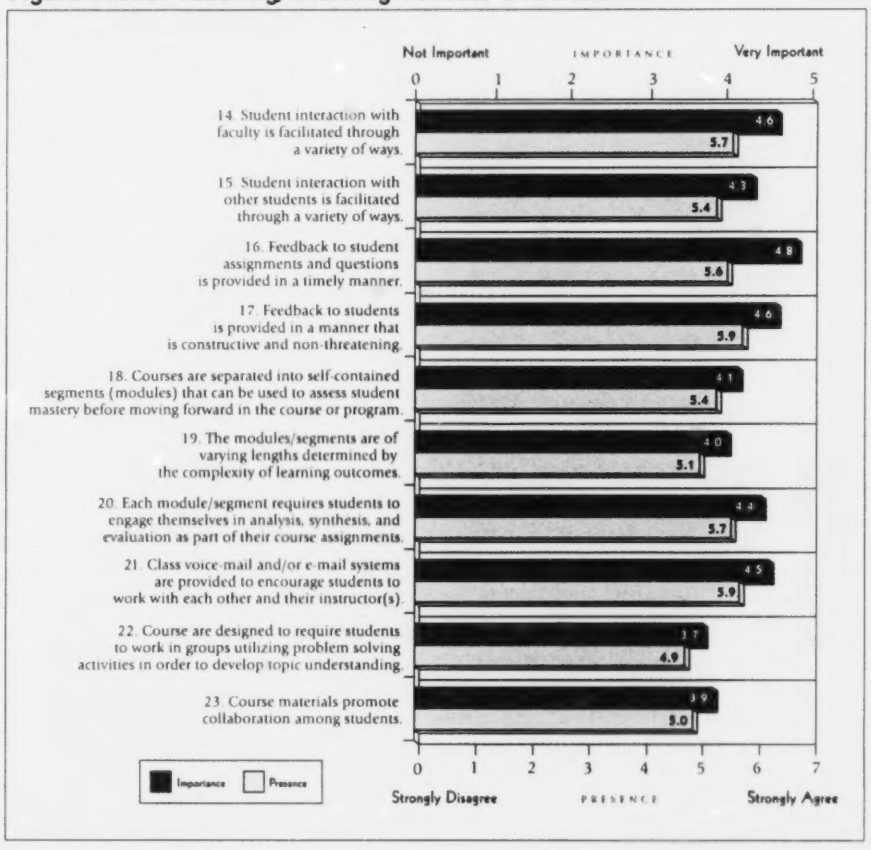
With respect to modular learning, several respondents did not consider these benchmarks very relevant. Benchmarks 18 and 19 are, as one faculty member wrote, "...naive and passe. In several respects, we have gone beyond that." Another stated that modular learning is not supported by the research and is not appropriate as a stand-alone benchmark.

## A Word About Interactivity

Figure Three shows three benchmarks that address the process of interactivity (#14, #15, and #16), all of which received high scores for importance and presence. It has become increasingly evident that interactivity is the *sine qua non* for quality in distance learning. Indeed, many would say that it is crucial for *any* type of learning. As Otto Peters, author of *Learning and Teaching in Distance Education*, writes:

> If we take distance education seriously and understand it to be something more than the mere distribution and reading of study materials, we must provide sufficient opportunities for

### Figure Three: Teaching/Learning Process Benchmarks


Not Important
IMPORTANCE
Very Important
0 1 2 3 4 5
14. Student interaction with faculty is facilitated through a variety of ways. 4.6 5.7
15. Student interaction with other students is facilitated through a variety of ways. 4.3 5.4
16. Feedback to student assignments and questions is provided in a timely manner. 4.8 5.6
17. Feedback to students is provided in a manner that is constructive and non-threatening. 4.6 5.9
18. Courses are separated into self-contained segments (modules) that can be used to assess student mastery before moving forward in the course or program. 4.1 5.4
19. The modules/segments are of varying lengths determined by the complexity of learning outcomes. 4.0 5.1
20. Each module/segment requires students to engage themselves in analysis, synthesis, and evaluation as part of their course assignments. 4.4 5.7
21. Class voice-mail and/or e-mail systems are provided to encourage students to work with each other and their instructor(s). 4.5 5.9
22. Course are designed to require students to work in groups utilizing problem solving activities in order to develop topic understanding. 3.7 4.9
23. Course materials promote collaboration among students. 3.9 5.0
Importance
Presence
0 1 2 3 4 5 6 7
Strongly Disagree
PRESENCE
Strongly Agree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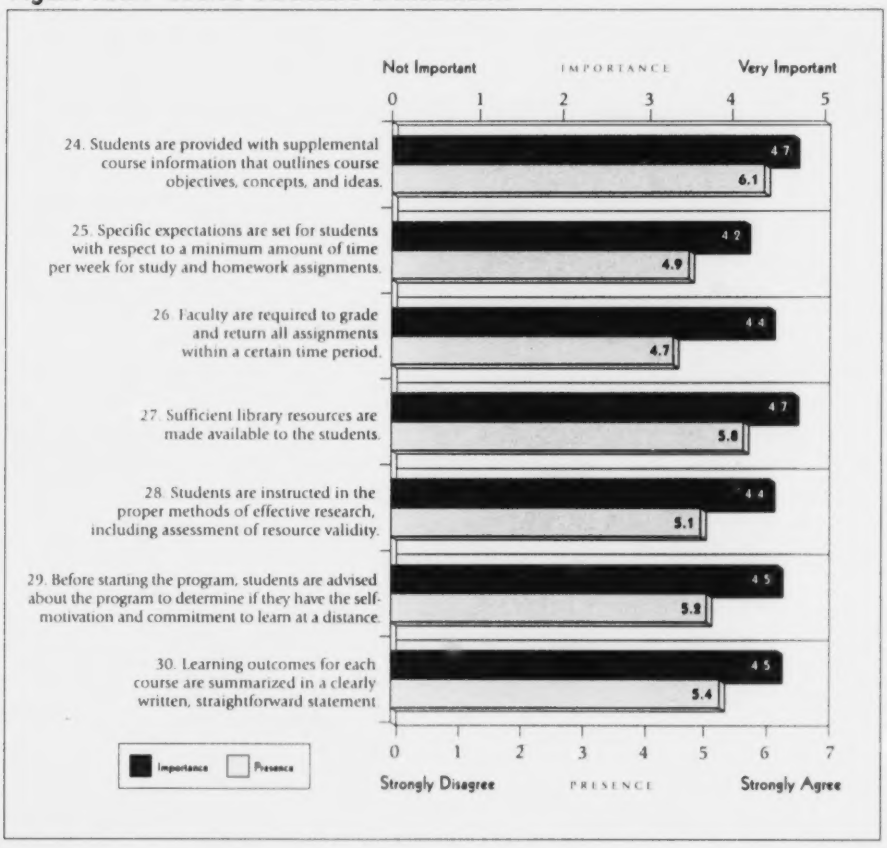
> dialogues. If, in addition, we understand academic studies as a process in which the aim is education through *knowledge*, we cannot do without a considerable proportion of dialogical learning and teaching in distance education. (Peters, 1999, pg. 39)

Many respondents agreed. One faculty member wrote that "Students need to communicate almost on a daily basis, not just once a week." Another noted that "in order to facilitate interactivity, in addition to e-mail and voice-mail, a conference system is very important." One student reflected the observations of several others in stating, "The majority of online classes I have taken have been set up very well for a successful educational experience. The instructors for these classes encouraged communication between their students and themselves and were available to answer questions at any time through e-mail. They also provided timely and valuable feedback on assignments, which is very important for a student's academic success."

***Self-directed study, which is prevalent at the graduate level, is being pushed down to the undergraduate level because of online learning.***
—ADMINISTRATOR

The notion of interactivity is highlighted here, not only because it is central to the quality of distance learning, but also because it leads to the realization that Internet-based distance education is evolving its *own* pedagogy. As noted by the League for Innovation in the Community College and others, online courses have certain characteristics that are unique to the technology—which allows the exploration of new pedagogical models. Faculty are still learning about, and experimenting with, different ways that students can interact with faculty, other students, and a wide variety of instructional resources. One institution combines the use of asychronous technologies to facilitate much of the classroom interactions and synchronous communication to facilitate small group interactions and course office hours. With respect to interactivity, one faculty member lamented that, "Too often we try to emulate the classroom. Even software vendors try to emulate the classroom. The fact is that online learning is affecting how we teach in traditional classrooms."

## Figure Four: Course Structure Benchmarks


Not Important
IMPORTANCE
Very Important
0 1 2 3 4 5
24. Students are provided with supplemental course information that outlines course objectives, concepts, and ideas.
4.7
6.1
25. Specific expectations are set for students with respect to a minimum amount of time per week for study and homework assignments.
4.2
4.9
26. Faculty are required to grade and return all assignments within a certain time period.
4.4
4.7
27. Sufficient library resources are made available to the students.
4.7
5.8
28. Students are instructed in the proper methods of effective research, including assessment of resource validity.
4.4
5.1
29. Before starting the program, students are advised about the program to determine if they have the self-motivation and commitment to learn at a distance.
4.5
5.2
30. Learning outcomes for each course are summarized in a clearly written, straightforward statement
4.5
5.4
Importance
Presence
0 1 2 3 4 5 6 7
Strongly Disagree
PRESENCE
Strongly Agree

## Course Structure

In general, the course structure benchmarks were seen as both important and present at the institutions.

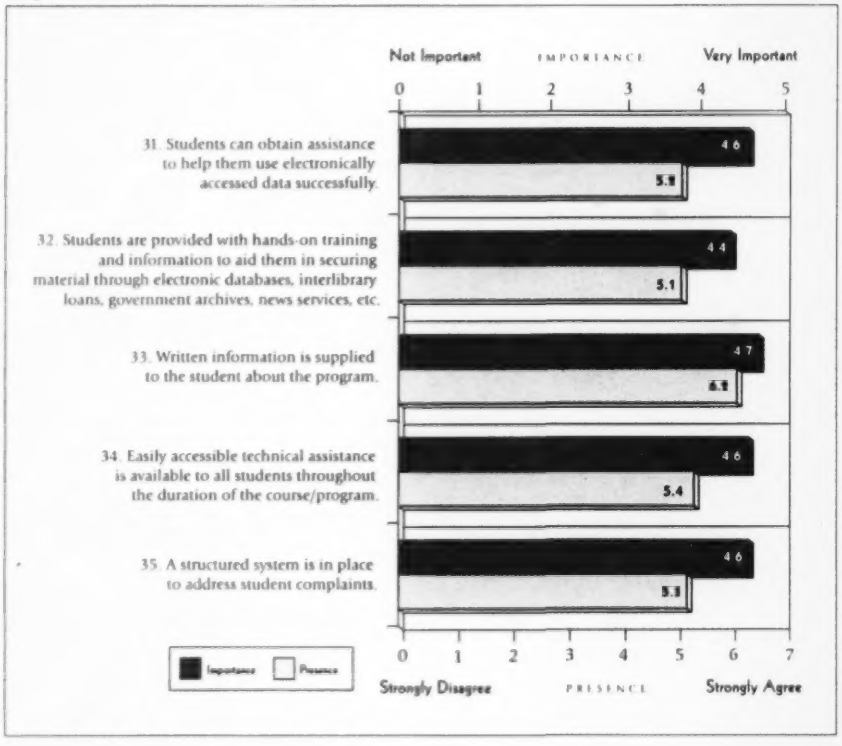
However, as illustrated in Figure Four, benchmarks 25 and 26 addressing specific time requirements were the exception, scoring lower in terms of presence. Many respondents balked at the prescriptive nature of these benchmarks. Given the dynamic and innovative characteristics of Internet-based distance education, particularly the capacity for students to pace themselves in a variety of ways, hard and fast rules on how much work should be accomplished in a specific time period or the precise response time for a faculty member is inappropriate. One student responded to a minimum amount of time per week for study: "Yeah, they (faculty) give us recommendations, but they don't 'push' you. That's good! I enrolled in a [online] course so I would have the freedom to study at my pace and when I wanted to study. I did everything at my own pace for the first course and I got an 'A.' Therefore, stressing a strict pace is 'not important.'" However, there was strong consensus that faculty and students must agree when assignments need to be completed and returned.

***Students need to understand more fully the role and responsibility they need to participate in online courses.***
—ADMINISTRATOR

The very high ratings for the benchmark regarding library resources (#27) are worth noting. In many respects, the library has come to the student's home or workplace. At several institutions, the librarian scans any article the faculty member requests, providing the full text online. In addition, the library resources include many online full-text books and, if needed, interlibrary loans. Reference assistance to students is not neglected and some respondents suggested that a reference person should be available 24 hours a day, 7 days a week. At least one institution required students to take a four-hour, non-credit course about library resources.

It may be helpful to examine briefly the issue of class size, although there are no benchmarks directly related to maximum class size. Because the case study revealed a wide variety of opinions, it is inappropriate that a specific benchmark on maximum class size be introduced. More than one respondent suggested that there should be a maximum size, say 20 or 25 students. Another recommended that the *first* online course a faculty member teaches should enroll no more than 15 students. Yet another institution is experimenting with class size and is incrementally increasing student enrollment in Internet courses. At the other extreme, one institution offers a two-credit orientation course with over 300 students enrolled. When asked how much of the faculty time per week was required for the large enrollment course, the answer was about 20 hours. The instructor noted that appropriate interaction and successful student outcomes can be achieved in courses with large

**Figure Five: Student Support Benchmarks**


Not Important
IMPORTANCE
Very Important
0 1 2 3 4 5
31. Students can obtain assistance to help them use electronically accessed data successfully.
4.6
5.1
32. Students are provided with hands-on training and information to aid them in securing material through electronic databases, interlibrary loans, government archives, news services, etc.
4.4
5.1
33. Written information is supplied to the student about the program.
4.7
5.1
34. Easily accessible technical assistance is available to all students throughout the duration of the course/program.
4.6
5.4
35. A structured system is in place to address student complaints.
4.6
5.1
Importance
Presence
0 1 2 3 4 5 6 7
Strongly Disagree
PRESENCE
Strongly Agree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enrollments using a variety of methods, including student collaboration. It could be argued that maximum class size relates more to faculty course workload than student outcomes. It appears, therefore, that a specific benchmark for class size is ill advised, and much more experimentation needs to be conducted.

## Student Support

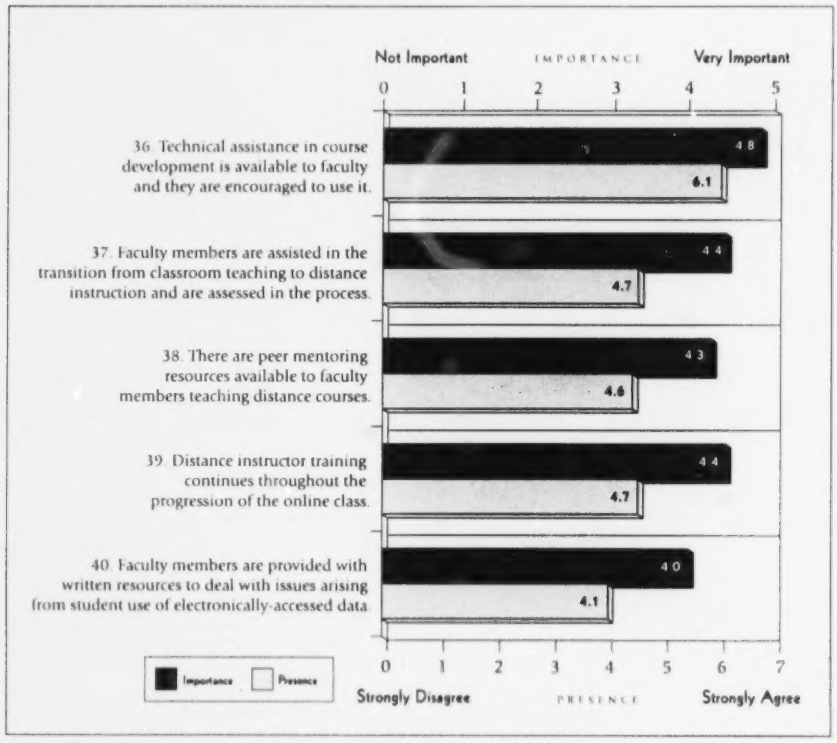
Each of the benchmarks in this category were ranked as having a high degree of importance. However, it appears that, for at least three benchmarks concerning technical assistance and training for students (#31, 32, and 34), the institutions feel they have some way to go.

It is important to understand that traditional on-campus students are among those participating in Internet-based distance education, taking one or two online courses because it is convenient or to avoid conflicts with another course. Therefore, student support services provide for a broader audience than would otherwise be expected. Furthermore, it was noted that those students who are at a distance and do not come to the campus may have greater need for feedback than the traditional student. As one student noted, "I find that online advisement and school services other than course work is the real problem."

> ***I have only had two bad experiences with online classes, mainly because the course was not set up as completely or as well as other courses. They were more like correspondence courses and lacked feedback from the professors on assignments.***
> —STUDENT

To address this problem, one institution has established an electronic peer network in a web-based environment that enables students to interact academically and socially online. Students are able to identify other students with common interests, participate in live chats and threaded discussion groups, exchange books and study materials, locate study partners, access career resources, and/or join an online study group.

### Figure Six: Faculty Support Benchmarks


Not Important
IMPORTANCE
Very Important
0 1 2 3 4 5
36. Technical assistance in course development is available to faculty and they are encouraged to use it.
4.8
6.1
37. Faculty members are assisted in the transition from classroom teaching to distance instruction and are assessed in the process.
4.4
4.7
38. There are peer mentoring resources available to faculty members teaching distance courses.
4.3
4.6
39. Distance instructor training continues throughout the progression of the online class.
4.4
4.7
40. Faculty members are provided with written resources to deal with issues arising from student use of electronically-accessed data.
4.0
4.1
Importance
Presence
0 1 2 3 4 5 6 7
Strongly Disagree
PRESENCE
Strongly Agree

Many respondents recognized that a number of students need more preparation for working on the Internet. As a consequence, institutions provide technical help through a variety of ways, including an 800 number, e-mail, a real-time chat room, and an online tutorial for technical assistance. Technical staff meet several times a year to improve the technical support based on student complaints.

In areas other than technical assistance, student support personnel are devising several ways to help online students. One institution has set the goal of "one-stop shopping." To accomplish this goal, advisors have information on a computer screen that

covers virtually all of a particular student's needs, including financial aid, academic program, tuition and fees, etc. At another institution, an advisor saw herself as a "coach," providing both support and encouragement for online students. These issues led several respondents to suggest that a new benchmark needs to be included under student support: "Questions directed to student service personnel must be answered accurately and quickly."

*Figuring out what works is an exciting challenge in education, but magnified by Internet-based distance education. It's an exciting time to be an educator.*

—FACULTY

## Faculty Support

With the possible exception of the benchmark addressing written resources for faculty on student use of electronically-accessed data (#40), the rest of the benchmarks were considered very important. However, the three benchmarks concerning training and technical assistance for faculty (#37, 38, and 39) had lower scores for presence.

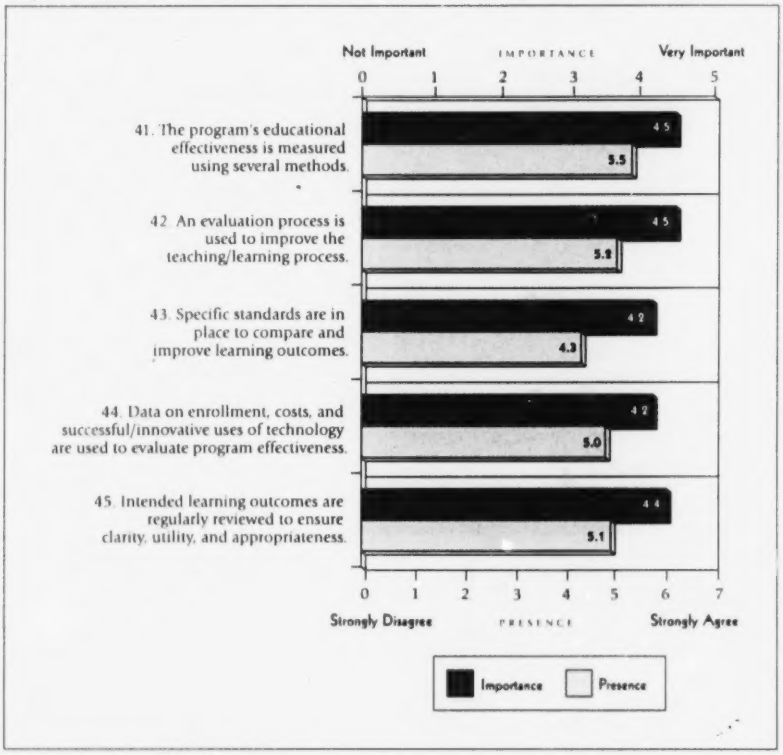
Every institution in the case study has systematic processes for transitioning faculty to online instruction from the traditional classroom and for training and assisting faculty teaching online courses. Given that a substantial number of faculty teaching online courses volunteered for the assignment, and many are veteran teachers respected by their peers, their standards are quite high and their dedication is keen. Information from the interviews strongly suggested that a major reason for the less than optimum presence of assistance was lack of resources, not lack of will. As noted earlier, several of the campuses are trying to keep up with student demand, while sufficient personnel and financial resources may be lagging behind. This is particularly true in the area of technical assistance. One faculty member lamented that the technical aspect of online teaching is sometimes overwhelming. Another faculty member wrote that "pedagogy of online learning must be part of training and the online environment."

## Evaluation and Assessment

All of the benchmarks in this category are considered important by the institutions in the case study. Benchmark 43 addressing specific standards, however, had a relatively low mark for presence. By and large, all of the institutions had systems in place that addressed evaluation and assessment. More than one institution had elaborate evaluation and assessment procedures. It is clear that all of the institutions recognize the importance of evaluation and assessment.

One interesting evaluation system for online instruction that is still evolving invokes a medical analogy in which a physician examines a patient's vital signs to determine the patient's current state of health. Vital signs that are below acceptable standards are

**Figure Seven: Evaluation and Assessment Benchmarks**



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examined in more detail, utilizing more precise information and investigative techniques. In distance education, data are used to calculate a program's "health" rating in six areas: student demand; student retention; student satisfaction; faculty satisfaction; student achievement; and financial efficiency.

One issue that was mentioned by more than one respondent had to do more with outcomes, specifically student attrition. In The Institute for Higher Education Policy's 1999 report, *What's the Difference? A Review of Contemporary Research on the Effectiveness of Distance Learning in Higher Education*, concern regarding the apparent high attrition of online students as compared to traditional students was highlighted (Phipps and Merisotis, 1999). One administrator mentioned that there seems to be an inordinately high number of the following grades: "A," "F," and/or "W" (withdraw) for online students. Respondents from other institutions in the case study also referred to this problem. This anecdotal evidence suggests that there may be a bipolar distribution where students are either quite successful or dropping out. This further supports the conclusion in *What's the Difference?* that student attrition in Internet-based distance education courses is an important research topic in the evaluation and assessment programs of institutions.

# Recommendations

This case study of six higher education institutions revealed that, for the most part, the benchmarks for quality Internet-based distance education were considered important and, in general, the institutions strove to incorporate them into their policies, practices, and procedures. At the same time, there were several benchmarks that did not enjoy consensus among the administrators, faculty, and students at the institutions and, in some instances, were not considered mandatory to ensure quality distance education.

The purpose of this case study is to help policymakers make judgments with regard to quality Internet-based distance education. The challenge, then, is to identify those benchmarks that are essential for quality distance education, in contrast to those benchmarks that contribute to and support the teaching/learning process, but are not necessary or required to ensure quality.

Analysis of the quality indicators at these institutions suggests that the benchmarks that are mandatory are those for which *the absence of the benchmark would detract from quality*. Stated positively, the benchmark must be essential or imperative to ensure quality in Internet-based distance education. Our recommendations are based upon the quantitative data from the surveys but are moderated by the hours of interviews with faculty, administrators, and students. Even though a particular benchmark may have received a high score for either presence and importance, the interviews informed and tempered our understanding.

The Institute's analysis of the data and information from the interviews resulted in the elimination of 13 benchmarks and the addition of 3 benchmarks. Moreover, several benchmarks were combined because they addressed the same issue(s) and were related to each other. The final outcome is a list of 24 benchmarks that are essential to ensure quality in Internet-based distance education.

## Benchmarks That Are *Not* Essential

The following benchmarks are not essential for ensuring quality Internet-based distance education.

### Institutional Support Benchmarks

- *Faculty are provided professional incentives for innovative practices to encourage development of distance learning courses (#1).*
- *There are institutional rewards for the effective teaching of distance learning courses (#2).*

This recommendation may be the most controversial. Both of these benchmarks enjoyed consensus with regard to their importance to ensuring quality. Yet, despite their relatively low presence at the institution, quality Internet-based distance education was occurring at every one of these institutions. As noted earlier, the faculty involved in distance education were dedicated, experienced, enthusiastic, and exhibited a high degree of professionalism. Although they preferred to receive professional incentives and institutional rewards, the vast majority of the faculty engaged in distance learning because they were excited about it, they found it intrinsically rewarding, and they were already recognized by their peers as good teachers. Innovative distance education is happening every day without this benchmark. Moreover, many interviewees noted that distance education should be treated no differently than traditional classroom-based teaching.

### Course Development Benchmarks

- *During course development the various learning styles of students are considered (#9).*
- *Assessment instruments are used to ascertain the specific learning styles of students, which then determine the type of course delivery (#10).*

- *Courses are designed with a consistent structure, easily discernable to students of varying learning styles (#11).*

The benchmarks addressing student learning styles received a cool reception from many faculty and administrators. In the view of several respondents, benchmarks addressing student learning styles were often platitudes with little basis in research and were very difficult to accomplish. While there is an implicit recognition of how students learn and an explicit understanding of the importance of interaction, constructive feedback, and other characteristics of good pedagogy, benchmarks that required these practices are not necessary to ensure quality.

- *Course design is managed by teams comprised of faculty, content experts, instructional designers, technical experts, and evaluation personnel (#8).*

This benchmark was considered by many to be overkill. By and large, Internet-based distance education is the responsibility of the instructor and the academic department. The course development practices varied from department to department and institution to institution. The degree to which teams were formed for course design depended upon many factors, including the experience and knowledge of the faculty member, the degree to which the instructor asked for assistance, and departmental policies.

- *Distance learning course development must be approved through a broad peer review process (#6).*

The majority of faculty and administrators objected strongly to this benchmark, particularly expressing concern about the definition of "broad." Peer review for distance education courses should be no different than that for traditional campus-based courses was a common refrain. In addition to concerns about academic freedom, subjecting distance learning courses to procedures that are more rigorous than the usual campus policies suggested a degree of oversight that was both unnecessary and detrimental to the ability of faculty to be innovative and responsive to student needs.

## Teaching/Learning Benchmarks

- *Courses are designed to require students to work in groups utilizing problem-solving activities in order to develop topic understanding (#22).*
- *Course materials promote collaboration among students (#23).*

The benchmark addressing the importance of collaboration was not viewed as essential to quality Internet-based distance education. It is important to note that many courses incorporated collaboration among students and some instructors even required it. However, including this benchmark as mandatory to ensure quality in distance education was not supported by a large number of interviewees. The decision to design collaboration in a specific course should be based upon several factors, including the difficulty of the content, course level, subject matter, and maturity of the students.

- *Courses are separated into self-contained segments (modules) that can be used to assess student mastery before moving forward in the course or program (#18).*
- *The modules/segments are of varying lengths determined by the complexity of learning outcomes (#19).*

Similar to the arguments about collaboration, many faculty and administrators did not view modular learning as a requirement for quality. A few faculty, however, insisted that modular learning is a vital pedagogical activity. Others were equally insistent that there are several reasons for not designing a course or other learning activities in self-contained segments, as knowledge was integrated *across* several courses. The weight of evidence suggested that requiring modular learning as a prerequisite for quality distance education is inappropriate.

## Course Structure Benchmarks

- *Specific expectations are set for students with respect to a minimum amount of time per week for study and homework assignments (#25).*
- *Faculty are required to grade and return all assignments within a certain time period (#26).*

Many faculty and administrators were concerned about the prescriptive nature of these benchmarks regarding time expectations for students and faculty. Internet-based distance education is complex, and the pedagogy is constantly evolving as faculty experiment with a variety of techniques. Moreover, much of the learning process is

self-paced, which argues against the imposition of rigid standards. However, there was strong agreement that students and instructors each must have clear expectations of their responsibilities which should be no different than for any course, irrespective of its delivery.

## New Benchmarks

There were three quality benchmarks that were not included in the original 45 but were recommended by a large majority of faculty and administrators and are consistent with the outlined criteria.

- *The reliability of the technology delivery system is as failsafe as possible.*

At every one of the institutions in this case study, a benchmark related to the importance of the reliability of technology was suggested. As stated by many, system crashes were unacceptable and must be avoided at all costs. When the system is down, essentially little to no learning takes place. If the system is down for any length of time, students often become discouraged, angry, and begin to lose interest. Even if the system is down for a short period of time, the experience is disruptive to students and fosters skepticism that it will happen again. Several faculty and administrators noted that student attrition is often related to system unreliability.

- *Faculty and students agree upon expectations regarding times for student assignment completion and faculty response.*

As noted earlier, there are at least two benchmarks regarding faculty response to student assignments and feedback. There was strong agreement that faculty should respond to students as quickly as possible and that students need to spend a sufficient amount of time online to achieve academic success. The benchmarks were, however, too directive to be of much value. Many faculty and administrators recognized the potential of the Internet to transform the teaching/learning process and any benchmarks that inhibited their ability to innovate and experiment were rejected. This benchmark reinforces interaction and constructive faculty and student relationships without constraining pedagogical innovation.

- *Questions directed to student service personnel are answered accurately and quickly.*

Because online students may never have the opportunity to visit the campus from which they are taking courses or receiving their degree, it is essential that they enjoy the same access as traditional students to services such as admissions, registration, financial aid, career counseling, and academic course requirements. In fact, because they often do not have the opportunity for any face-to-face communication with student service personnel, extraordinary methods need to be developed to ensure that online students do not feel abandoned. These methods were discussed earlier in the report.

## Benchmarks That Are Essential for Quality Internet-based Distance Education

The following represents the final list of benchmarks resulting from this study. These benchmarks are the most essential to the success of an Internet-based distance education program at any institution. These benchmarks may be useful to government policymakers, institutional decisionmakers, faculty, and students, as well as others with an interest in ensuring that the highest quality of higher education possible is being provided via Internet-based programs.

### Institutional Support Benchmarks

- A documented technology plan that includes electronic security measures (i.e., password protection, encryption, back-up systems) is in place and operational to ensure both quality standards and the integrity and validity of information.
- The reliability of the technology delivery system is as failsafe as possible.
- A centralized system provides support for building and maintaining the distance education infrastructure.

### Course Development Benchmarks

- Guidelines regarding minimum standards are used for course development, design, and delivery, while learning outcomes—not the availability of existing technology—determine the technology being used to deliver course content.
- Instructional materials are reviewed periodically to ensure they meet program standards.

- Courses are designed to require students to engage themselves in analysis, synthesis, and evaluation as part of their course and program requirements.

### Teaching/Learning Benchmarks

- Student interaction with faculty and other students is an essential characteristic and is facilitated through a variety of ways, including voice-mail and/or e-mail.
- Feedback to student assignments and questions is constructive and provided in a timely manner.
- Students are instructed in the proper methods of effective research, including assessment of the validity of resources.

### Course Structure Benchmarks

- Before starting an online program, students are advised about the program to determine (1) if they possess the self-motivation and commitment to learn at a distance and (2) if they have access to the minimal technology required by the course design.
- Students are provided with supplemental course information that outlines course objectives, concepts, and ideas, and learning outcomes for each course are summarized in a clearly written, straightforward statement.
- Students have access to sufficient library resources that may include a "virtual library" accessible through the World Wide Web.
- Faculty and students agree upon expectations regarding times for student assignment completion and faculty response.

### Student Support Benchmarks

- Students receive information about programs, including admission requirements, tuition and fees, books and supplies, technical and proctoring requirements, and student support services.
- Students are provided with hands-on training and information to aid them in securing material through electronic databases, interlibrary loans, government archives, news services, and other sources.
- Throughout the duration of the course/program, students have access to technical assistance, including detailed instructions regarding the electronic media used, practice sessions prior to the beginning of the course, and convenient access to technical support staff.
- Questions directed to student service personnel are answered accurately and quickly, with a structured system in place to address student complaints.

### Faculty Support Benchmarks

- Technical assistance in course development is available to faculty, who are encouraged to use it.
- Faculty members are assisted in the transition from classroom teaching to online instruction and are assessed during the process.
- Instructor training and assistance, including peer mentoring, continues through the progression of the online course.
- Faculty members are provided with written resources to deal with issues arising from student use of electronically-accessed data.

### Evaluation and Assessment Benchmarks

- The program's educational effectiveness and teaching/learning process is assessed through an evaluation process that uses several methods and applies specific standards.
- Data on enrollment, costs, and successful/innovative uses of technology are used to evaluate program effectiveness.
- Intended learning outcomes are reviewed regularly to ensure clarity, utility, and appropriateness.

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# Appendix One: Institutional Profiles

**Brevard Community College** **Cocoa, FL**
*Carnegie Class:* Associate of Arts *Enrollment:* 14,732 *Established:* 1960

Brevard Community College began offering distance education telecourses in 1974 and has made distance learning via the Internet a priority in recent years. Currently, two entire associate's degree programs can be completed either online or through telecourses, as well as a number of individual courses. Within the next three to five years the institution plans to expand the number of programs that can be completed at a distance, focusing on increasing student retention in distance classes. Brevard also is a participant in the PBS Adult Learning Service "Going the Distance Program," which brings higher education to the growing numbers of adult students interested in distance education. The institution has a comprehensive plan to improve the quality of teaching and productivity of students through the use of technology and distance education. Brevard will be assisted in achieving these goals through a grant from the U.S. Department of Education's Fund for the Improvement of Postsecondary Education (FIPSE) that is focused on faculty training and development in order to impact positively student learning.

**Regents College** **Albany, NY**
*Carnegie Class:* Baccalaureate II *Enrollment:* 17,358 *Established:* 1970

Regents originally began as the External Degree Program of the University of the State of New York and operates on the philosophy that "What you know is more important than where or how you learned it." In April 1998, the college was granted an independent charter by the New York Board of Regents and now operates as a private institution. Focused on working adults, Regents provides an independent study program for various degrees ranging from Nursing to Information Technology. Students work at their own pace and can take examinations to demonstrate their knowledge. This format has allowed over 83,000 people worldwide to earn a college degree through Regents' programs. In February 1999 Regents was awarded a Meritorious Course Award from the University Continuing Education Association in recognition of its Theoretical Frameworks of Nursing Practice course.

**University of Illinois at Urbana-Champaign** **Urbana, IL**
*Carnegie Class:* Research I *Enrollment:* 36,019 *Established:* 1867

The University of Illinois at Urbana-Champaign is very active in distance learning on a number of different fronts. They are one of three participants in the University of Illinois Online (along with the Springfield and Chicago campuses), which offers 20 degree- or certificate-programs over the Internet with more in development. The university also offers online master's degree programs in six fields. The school received funding from the Pew Grant Program of Course Redesign in 1999 to redesign a two-course sequence in Economic Statistics to make the courses more "hands on." Another innovative facet of the university's distance education programs is the Idea Village. Still in its initial phases, the Idea Village is essentially an online college community that will feature portals to online classrooms, academic and social information, an online library, and an online help center.

**University of Maryland University College** **College Park, MD**
*Carnegie Class:* Master's I *Enrollment:* 13,786 *Established:* 1947

A virtual institution, the University of Maryland University College (UMUC) was founded with the mission of providing continuing education to Maryland's professional workforce. With experience in distance education that spans more than a quarter century UMUC began offering courses over the Internet in Fall 1997 and currently offers 14 bachelor's and 10 master's degree programs online. The institution operates internationally, serving active duty military personnel in Europe, the Mid-East, the Pacific, and East Asia. To assure that increasing numbers of students are well served, UMUC is focusing on infrastructure issues, including expansion of student services over the World Wide Web as well as the availability of library resources online. UMUC was awarded the University Continuing Education Association's Award for Innovative Distance Education in 1998 and 1999, and was included in *Forbes Magazine's* list of the top 20 "cyber universities" in 1997.

**Utah State University** **Logan, UT**
*Carnegie Class:* Research I *Enrollment:* 21,234 *Established:* 1888

Utah State University (USU) has been involved in various forms of distance education—from correspondence courses to satellite-delivered courses—since 1911. The institution has now expanded those offerings to include two types of online courses, semester-based and independent study. The semester-based courses are similar to the courses that students would take on campus and follow a similar schedule. The independent study courses allow students to enroll at anytime with the provision that they must complete the course within one calendar year of enrolling. Additionally, USU is now offering a number of degree programs online, mostly from the Department of Special Education and Rehabilitation. USU also has been selected as a participant in the Learning Anytime Anywhere Partnerships program created in the 1998 reauthorization of the Higher Education Act. It will partner with PBS Adult Learning Service, the American Association for Higher Education, Western Governors University, and MadDuck Technologies to find innovative ways of providing persons with disabilities access to postsecondary education.

**Weber State University** **Ogden, UT**
*Carnegie Class:* Master's II *Enrollment:* 14,613 *Established:* 1889

Weber State University (WSU) is heavily invested in distance learning. The institution began offering independent study courses over 10 years ago, and in Fall 1995 conceptualized an online campus. The plan included moving courses to the Internet, and providing student services, academic advising, and technical support. Over the next two years the institution designed and tested all of its own tools including online chat and bookstore services. In Fall 1997, WSU Online was launched. Currently it offers two-thirds of the online courses in Utah. These include over 70 independent study courses offered in more than 20 disciplines. WSU also offers a number of associate's and bachelor's degree programs in health professions. Despite the fact that the online venture is only two years old, it now enrolls more than 2000 students and recieved an Innovation in Distance Education Award from the University Continuing Education Association in 1998.

**Carnegie classification, enrollment, and establishment data are taken from the *1999 Higher Education Directory*. Higher Education Publications, Falls Church, VA. Enrollment data are from 1997-98.**

# Appendix Two

| All Survey Results | All | | | |
|---|---|---|---|---|
| | Average | St Dev | Count | Mode |
| **Institutional Support** | | | | |
| 1. Faculty are provided professional incentives for innovative practices to encourage development of distance learning courses. | 4.1 | 1.943 | 83 | 4 |
| | 4.4 | 0.782 | 97 | 5 |
| 2. There are institutional rewards for the effective teaching of distance learning courses. | 3.4 | 2.010 | 81 | 1 |
| | 4.2 | 0.769 | 98 | 4 |
| 3. A documented technology plan is in place to ensure quality standards. | 4.4 | 1.796 | 72 | 5 |
| | 4.3 | 0.753 | 94 | 5 |
| 4. Electronic security measures are in place to ensure the integrity and validity of information. | 6.1 | 1.183 | 89 | 7 |
| | 4.8 | 0.546 | 103 | 5 |
| 5. Support for building and maintaining the distance education infrastructure is addressed by a centralized system. | 5.5 | 1.606 | 87 | 7 |
| | 4.3 | 1.031 | 98 | 5 |
| **Course Development** | | | | |
| 6. Distance learning course development must be approved through a broad peer review process. | 4.4 | 2.001 | 85 | 7 |
| | 3.8 | 1.168 | 100 | 5 |
| 7. Guidelines exist regarding minimum standards for course development, design, and delivery. | 5.1 | 1.789 | 86 | 7 |
| | 4.6 | 0.684 | 100 | 5 |
| 8. Course design is managed by teams comprised of faculty, content experts, instructional designers, technical experts, and evaluation personnel. | 4.4 | 2.083 | 89 | 7 |
| | 4.2 | 1.008 | 100 | 5 |
| 9. During course development, the various learning styles of students are considered. | 4.6 | 1.829 | 77 | 4 |
| | 4.2 | 0.972 | 97 | 5 |
| 10. Assessment instruments are used to ascertain the specific learning styles of students, which then determine the type of course delivery. | 2.8 | 1.737 | 104 | 1 |
| | 3.5 | 1.173 | 120 | 4 |
| 11. Courses are designed with a consistent structure, easily discernable to students of varying learning styles. | 5.2 | 1.692 | 116 | 6 |
| | 4.4 | 0.833 | 136 | 5 |
| 12. The technology being used to deliver course content is based on learning outcomes. | 5.0 | 1.736 | 70 | 5 |
| | 4.3 | 0.900 | 87 | 5 |
| 13. Instructional materials are reviewed periodically to ensure they meet program standards. | 5.4 | 1.723 | 87 | 7 |
| | 4.4 | 0.803 | 102 | 5 |
| **Teaching/Learning Process** | | | | |
| 14. Student interaction with faculty is facilitated through a variety of ways. | 5.7 | 1.457 | 136 | 7 |
| | 4.6 | 0.736 | 141 | 5 |
| 15. Student interaction with other students is facilitated through a variety of ways. | 5.4 | 1.675 | 140 | 7 |
| | 4.3 | 0.872 | 142 | 5 |
| 16. Feedback to student assignments and questions is provided in a timely manner. | 5.6 | 1.273 | 121 | 6 |
| | 4.8 | 0.397 | 140 | 5 |

Note: The set of values presented represent the presence and importance of each benchmark.



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| All Survey Results | All | | | |
|---|---|---|---|---|
| | Average | St Dev | Count | Mode |
| 17. Feedback to students is provided in a manner that is constructive and non-threatening. | 5.9 | 1.219 | 121 | 7 |
| | 4.6 | 0.734 | 142 | 5 |
| 18. Courses are separated into self-contained segments (modules) that can be used to assess student mastery before moving forward in the course or program. | 5.4 | 1.814 | 117 | 7 |
| | 4.1 | 0.943 | 133 | 4 |
| 19. The modules/segments are of varying lengths determined by the complexity of learning outcomes. | 5.1 | 1.780 | 71 | 7 |
| | 4.0 | 0.910 | 88 | 4 |
| 20. Each module/segment requires students to engage themselves in analysis, synthesis, and evaluation as part of their course assignments. | 5.7 | 1.421 | 110 | 7 |
| | 4.4 | 0.797 | 129 | 5 |
| 21. Class voice-mail and/or e-mail systems are provided to encourage students to work with each other and their instructor(s). | 5.9 | 1.570 | 129 | 7 |
| | 4.5 | 0.827 | 140 | 5 |
| 22. Course are designed to require students to work in groups utilizing problem-solving activities in order to develop topic understanding. | 4.9 | 1.939 | 111 | 7 |
| | 3.7 | 1.163 | 132 | 5 |
| 23. Course materials promote collaboration among students. | 5.0 | 1.781 | 111 | 7 |
| | 3.9 | 1.125 | 134 | 5 |
| **Course Structure** | | | | |
| 24. Students are provided with supplemental course information that outlines course objectives, concepts, and ideas. | 6.1 | 1.125 | 136 | 7 |
| | 4.7 | 0.655 | 143 | 5 |
| 25. Specific expectations are set for students with respect to a minimum amount of time per week for study and homework assignments. | 4.9 | 1.617 | 122 | 6 |
| | 4.2 | 1.041 | 138 | 5 |
| 26. Faculty are required to grade and return all assignments within a certain time period. | 4.7 | 1.896 | 108 | 6 |
| | 4.4 | 0.901 | 134 | 5 |
| 27. Sufficient library resources are made available to the students. | 5.8 | 1.546 | 135 | 7 |
| | 4.7 | 0.609 | 141 | 5 |
| 28. Students are instructed in the proper methods of effective research, including assessment of resource validity. | 5.1 | 1.827 | 116 | 7 |
| | 4.4 | 0.793 | 136 | 5 |
| 29. Before starting the program, students are advised about the program to determine if they have the self-motivation and commitment to learn at a distance. | 5.2 | 1.896 | 123 | 7 |
| | 4.5 | 0.807 | 141 | 5 |
| 30. Learning outcomes for each course are summarized in a clearly written, straightforward statement. | 5.4 | 1.578 | 76 | 6 |
| | 4.5 | 0.578 | 97 | 5 |
| **Student Support** | | | | |
| 31. Students can obtain assistance to help them use electronically accessed data successfully. | 5.2 | 1.650 | 130 | 7 |
| | 4.6 | 0.700 | 140 | 5 |
| 32. Students are provided with hands-on training and information to aid them in securing material through electronic databases, interlibrary loans, government archives, news services, etc. | 5.1 | 1.834 | 126 | 6 |
| | 4.4 | 0.846 | 136 | 5 |
| 33. Written information is supplied to the student about the program. | 6.2 | 1.218 | 135 | 7 |
| | 4.7 | 0.653 | 144 | 5 |

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| All Survey Results | All | | | |
|---|---|---|---|---|
| | Average | St Dev | Count | Mode |
| 34. Easily accessible technical assistance is available to all students throughout the duration of the course/program. | 5.4 | 1.743 | 126 | 7 |
| | 4.6 | 0.626 | 138 | 5 |
| 35. A structured system is in place to address student complaints. | 5.3 | 1.657 | 116 | 7 |
| | 4.6 | 0.721 | 133 | 5 |
| **Faculty Support** | | | | |
| 36. Technical assistance in course development is available to faculty and they are encouraged to use it. | 6.1 | 1.276 | 89 | 7 |
| | 4.8 | 0.520 | 100 | 5 |
| 37. Faculty members are assisted in the transition from classroom teaching to distance instruction and are assessed in the process. | 4.7 | 1.893 | 83 | 7 |
| | 4.4 | 0.782 | 95 | 5 |
| 38. There are peer mentoring resources available to faculty members teaching distance courses. | 4.6 | 1.890 | 82 | 7 |
| | 4.3 | 0.763 | 96 | 5 |
| 39. Distance instructor training continues throughout the progression of the online class. | 4.7 | 1.764 | 79 | 5 |
| | 4.4 | 0.773 | 96 | 5 |
| 40. Faculty members are provided with written resources to deal with issues arising from student use of electronically-accessed data. | 4.1 | 1.846 | 81 | 4 |
| | 4.0 | 0.902 | 98 | 5 |
| **Evaluation and Assessment** | | | | |
| 41. The program's educational effectiveness is measured using several methods. | 5.5 | 1.517 | 86 | 7 |
| | 4.5 | 0.692 | 98 | 5 |
| 42. An evaluation process is used to improve the teaching/learning process. | 5.2 | 1.754 | 84 | 6 |
| | 4.5 | 0.632 | 96 | 5 |
| 43. Specific standards are in place to compare and improve learning outcomes. | 4.3 | 1.848 | 72 | 4 |
| | 4.2 | 0.814 | 96 | 5 |
| 44. Data on enrollment, costs, and successful/innovative uses of technology are used to evaluate program effectiveness. | 5.0 | 1.701 | 67 | 5 |
| | 4.2 | 0.906 | 96 | 5 |
| 45. Intended learning outcomes are regularly reviewed to ensure clarity, utility, and appropriateness. | 5.1 | 1.602 | 80 | 6 |
| | 4.4 | 0.765 | 99 | 5 |

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